

REMARKS

Claims 1-20 are pending herein. Claims 13-20 have been withdrawn from consideration by the Patent Office. By this Amendment, the specification is amended to capitalize trademarks. Claim 1 is amended to revise an alleged objectionable informality.

No new matter is added.

The attached Appendix includes a marked-up copy of each rewritten paragraph (37 C.F.R. §1.121(b)(1)(iii)) and claim (37 C.F.R. §1.121(c)(1)(ii)).

Applicants appreciate the courtesies shown to Applicants' representative by Examiner Dote in the July 16, 2002 personal interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

I. Objection to the Specification

The specification was objected to by the Patent Office for allegedly containing objectionable informalities. Applicants respectfully traverse the objection.

In particular, the Patent Office alleged that recited trademarks should be capitalized whenever they appear and be accompanied by the generic terminology.

By this Amendment, all trademarks are capitalized wherever they appear and are accompanied by the generic terminology.

Thus, reconsideration and withdrawal of the rejection are respectfully requested.

II. Claim Objection

Claim 1 was objected to by the Patent Office for allegedly containing an objectionable informality. The objection is respectfully traversed.

In particular, the Patent Office alleges that the phrase "distributionrespectively" is missing a space between the words "distribution" and "respectively." By this Amendment, claim 1 is amended to recite "distribution respectively" instead of "distributionrespectively."

Thus, Applicants respectfully request reconsideration and withdrawal of the objection.

III. Rejection Under 35 U.S.C. §103(a)

Claims 1-4, 6-10 and 12 were rejected by the Patent Office under 35 U.S.C. §103(a) as allegedly being obvious over U.S. Patent No. 5,250,382 to Shimojo et al. (hereinafter "Shimojo") combined with U.S. Patent No. 5,079,123 to Nanya et al. (hereinafter "Nanya"). The rejection is respectfully traversed.

Shimojo fails to teach or suggest the present invention. The Patent Office alleges that Shimojo teaches a two-component developer comprising a binder resin of a domain-matrix structure. (See Example 31 of Shimojo). The domain resin of Example 31 has a Mw of 12,000 and a ratio of Mw/Mn of 2.4. The matrix resin of Example 31 has a Mw of 21,000 and a ratio of Mw/Mn of 3.1, and is in a weight ratio of 50:50 with the domain resin.

The Patent Office alleges that claimed properties recited in claim 1 of the present invention would be presumed present based on the composition of the binder resin of the Shimojo developer. Applicants respectfully disagree with this assertion.

Applicants draw attention to the composition of Comparative Example 1 of the present invention. (See, for example, page 30). Comparative Example 1 comprises linear polyester 2 and linear polyester 4. Linear polyester 2 has a molecular weight of 10,500 and a Mw/Mn of 3.28. Linear polyester 2 thus could fit a description of the presently claimed binder resin (A) which has a molecular weight between 8,000 and 18,000 and a ratio (Mw/Mn) from 2 to 4. Linear polyester 4 has a molecular weight of 27,500 and a Mw/Mn of 3.93, and could compare to the presently claimed binder resin (B) which has a molecular weight between 20,000 and 40,000 and a ratio (Mw/Mn) from 3 to 5.

Thus, based on these values, Comparative Example 1 fulfills the subject matter recited in claim 2 but not the subject matter of claim 1. According to the reasoning of the Patent Office, Comparative Example 1 should then fulfill all of the characteristics recited in claim 1

based upon containing the subject matter of claim 2. However, Table 3 shows that Comparative Example 1 has a $\{W(5 \times 10^3) / W(1 \times 10^5)\}$ of 11.8, a value not between 15 to 50 as recited in claim 1 of the present application. The reasoning of the Patent Office is thus untrue and is shown to be incorrect.

This is merely one example showing that merely fulfilling the claimed range requirements of the binder resins recited in claim 2 of the present invention does not automatically translate to also fulfilling all of the claimed aspects of claim 1.

Further, with this Amendment, Applicants submit a Declaration Under 37 CFR 1.132 showing that although Example 31 of Shimojo satisfies the requirements of dependent claim 2 of the present application, Example 31 fails to satisfy the requirements of independent claim 1. In particular, Example 31 of Shimojo does not possess a ratio $\{W(5 \times 10^3)/W(1 \times 10^5)\}$ from 15 to 50.

The Declaration under 37 CFR 1.132 also indicates that crosslinking of the binders decreases the value of $W(5 \times 10^3) / W(1 \times 10^5)$, as opposed to linear polymer binders.

Thus, Applicants submit that even if, for example, Shimojo teaches the claimed binders of claim 2, Shimojo does not teach or suggest the claimed subject matter of claim 1.

Further, by admission of the Patent Office, it is pointed out that Shimojo fails to disclose a toner having the molecular-by-weight-GPC properties of the THF-dissolved components of the present invention. Shimojo also fails to teach or suggest the presence of a wax.

Nanya fails to remedy the deficiencies of Shimojo. Nanya was merely relied upon as teaching the advantages of using a conventional carnauba wax. However, Nanya fails to remedy the deficiencies of Shimojo as set forth above.

For the foregoing reasons, Applicants submit that Shimojo and Nanya, whether taken singly or in combination, fail to teach or suggest the present invention. Reconsideration and withdrawal of the rejection are respectfully requested.

IV. Provisional Double Patenting Rejection

Claims 1-12 were provisionally rejected by the Patent Office under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 1-11 of co-pending Application No. 09/706,800 (hereinafter "Application '800"). The rejection is respectfully traversed.

In order to expedite the prosecution of the present application, Applicants submit a signed Terminal Disclaimer with this Amendment in order to overcome the provisional double-patenting rejection.

In view of the filing of a Terminal Disclaimer, Applicants respectfully request reconsideration and withdrawal of the provisional rejection.

V. Conclusion

In view of the foregoing amendments and remarks, Applicants submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-20 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,



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Attachments:

Appendix
Declaration Under 37 CFR 1.132
Terminal Disclaimer

Date: September 9, 2002

OLIFF & BERRIDGE, PLC
P.O. Box 19928
Alexandria, Virginia 22320
Telephone: (703) 836-6400

<p>DEPOSIT ACCOUNT USE AUTHORIZATION Please grant any extension necessary for entry; Charge any fee due to our Deposit Account No. 15-0461</p>
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APPENDIX

Changes to Specification:

Page 13, lines 21-26:

In the invention, the shape factor of the toner is calculated by the following measurement method. The shape factor is used as a factor of expressing the shape or form, etc., of the toner, is based on a statistic technique of an image analysis capable of quantitatively analyzing at high precision the area, the length, the form, etc., of the image caught by an optical microscope, etc., and can be measured by an image analyzer (~~Luzex~~ LUZEX 5000TM, manufactured by Nippon Regulator Co., Ltd.).

Page 31, lines 13-17:

About the toners 1 to 6 obtained as described above, the integral molecular weight distribution of each toner is measured by the same method as the above-described method of measuring the integral molecular weight distribution of the binder resin. Also, by an image analyzer (Type ~~Luzex~~ LUZEX 5000TM, manufactured by Nippon Regulator K.K.), SF-1 and SF-2 of each toner are measured. These results are shown in Table 3 below.

Page 32, lines 1-16:

Table 3

		Mn	Mw	Molecular weight of at least 5×10^5 (wt.%)	$W(5 \times 10^3) / W(5 \times 10^5)$	Molecular weight of at least 3×10^3 (wt.%)	SF-1	SF-2
Example 1	Toner 1	5200	20500	0.0	25.4	28	142	115
Example 2	Toner 2	4700	19800	0.0	18.5	21	145	119
Example 3	Toner 3	5300	21800	0.0	32.5	23	140	112
Comparative Example 1	Toner 4	3500	18500	0.0	11.8	22	140	118
Comparative Example 2	Toner 5	4600	29400	1.8	16.5	28	161	142
Comparative Example 3	Toner 6	4500	14500	0.0	55.8	42	138	111

Page 33, lines 3-7:

For the test, each solid unfixed toner image having a length of 5 cm and a width of 4 cm is formed on a transfer paper of A4 having a basis weight of 100 g/m² for the electrophotographic copying machine (~~A-Color~~ A-COLOR 935TM, manufactured by FUJI XEROX CO., LTD.). In this case, each toner image is formed such that the toner amount of the transfer paper becomes 0.5 mg/cm² or 1.5 mg/cm².

Page 34, lines 6-11:

Using the solid unfixed toner image having the toner amount of 0.5 mg/cm², the test at 160°C is carried out in the state of substantially not existing a releasing oil on the surface of the heat roller by stopping the supply of the releasing oil to the heat roller. In this case, the glossiness of 75 degree of the fluid sample is measured using ~~Gloss-Meter~~ GLOSS METERTM (manufactured by Mirakami Shihisai Kogaku Kenkyusho). The measurement results are shown in Table 4 below.

Page 35, lines 1-21:

Table 4

	Toner	Non-offset temperature region (°C)	Low-temp. Fixing property	Anti-offset property	OHP transparency (%)	glossiness at 160°C
Example 1	Toner 1	130 to 190	A	A	81 (A)	48
Example 2	Toner 2	128 to 181	A	A	87 (A)	56
Example 3	Toner 3	134 to 195	A	A	85 (A)	53
Comparative Example 1	Toner 4	118 to 165	A	C	80 (A)	54
Comparative Example 1 + 2	Toner 5	155 to 200	C	A	68 (C)	32
Comparative Example 1 + 3	Toner 6	115 to 160	A	C	78 (B)	44

Page 43, lines 1-29:

Table 7

		Mn	Mw	Molecular weight of at least 1×10^6 (wt.%)	Ratio of differential molecular weight distribution of 5×10^3 (%)	Ratio of differential molecular weight distribution of 1×10^5 (%)	SF-1	SF-2
Example 4	Toner 7	545-0	21400	0.0	0.32	0.07	141	116
Example 5	Toner 8	460-0	18800	0.0	0.47	0.04	143	115
Example 6	Toner 9	510-0	22500	0.0	0.35	0.12	143	118
Example 7	Toner 10	480-0	20300	0.0	0.41	0.06	145	119
Comparative Example 4	Toner 11	350-0	15500	0.0	0.58	0.04	142	120
Comparative Example 5	Toner 12	450-0	29600	0.0	0.28	0.22	162	142
Comparative Example 6	Toner 13	420-0	28400	2.25	0.47	0.18	144	115
Comparative Example 7	Toner 14	420-0	28400	2.25	0.47	0.18	144	115

Changes to Claims:

The following is a marked-up version of the amended claim:

1. (Amended) A toner for developing an electrostatic latent image comprising a binder resin, a colorant, and a wax, wherein in regard to the molecular weight by GPC of the THF dissolved components of the toner, the ratio of at least 5×10^5 in the integral molecular weight distribution is not higher than 1% by weight, the ratio of not higher than 3×10^3 in the integral molecular weight distribution is not higher than 30% by weight, and the ratio $\{W(5 \times 10^3)/W(1 \times 10^5)\}$ is from 15 to 50, wherein $\{W(5 \times 10^3)\}$ represents a ratio of not higher than 5×10^3 in the integral molecular weight distribution, and $\{W(1 \times 10^5)\}$ represents a ratio of at least 1×10^5 in the integral molecular weight distribution ~~distribution~~distribution respectively.